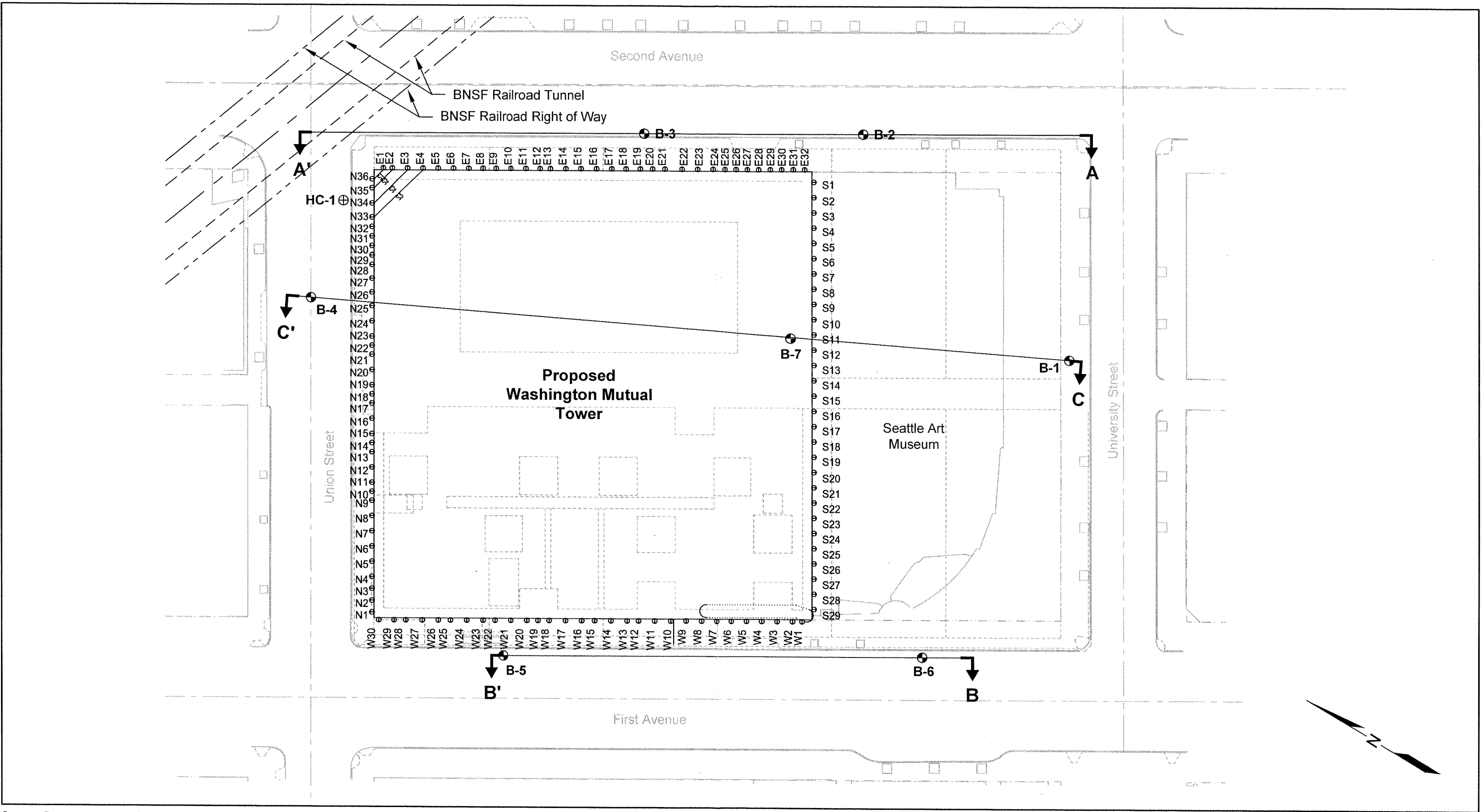


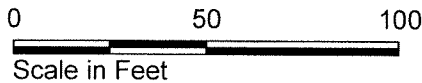
APPENDIX B

**Boring Logs and Results of
Physical Testing of Soil Samples,
Former Arcade Plaza (Excerpts
from Hart Crowser 2003b)**



Source: Base map prepared from NBBJ drawing titled "Shoring Plan", Sheet No. SH2.01, dated 7/18/03.

Boring Location and Number		Generalized Subsurface Profile Location and Designation
HC-1⊕	2003	
B-1⊙	1980 and 1981	Proposed Soldier Pile Location and Number
		⊙ S1



Key to Exploration Logs

Sample Description

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:

Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL Density	Standard Penetration Resistance (N) in Blows/Foot	SILT or CLAY Consistency	Standard Penetration Resistance(N) in Blows/Foot	Approximate Shear Strength in TSF
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum





Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50




Legends

Sampling Test Symbols

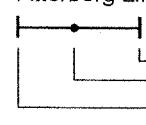
Boring Samples

	Split Spoon
	Shelby Tube
	Cuttings
	Core Run
*	No Sample Recovery
P	Tube Pushed, Not Driven

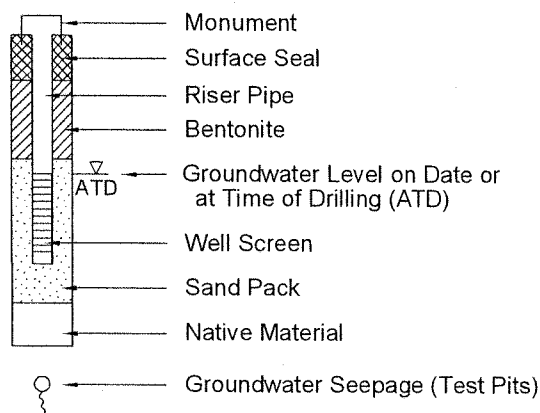
Test Pit Samples

	Grab (Jar)
	Bag
	Shelby Tube

Test Symbols

GS	Grain Size Classification
CN	Consolidation
UU	Unconsolidated Undrained Triaxial
CU	Consolidated Undrained Triaxial
CD	Consolidated Drained Triaxial
QU	Unconfined Compression
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer
	Approximate Compressive Strength in TSF
TV	Torvane
	Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits
	 Water Content in Percent
	Liquid Limit
	Natural
	Plastic Limit
PID	Photoionization Detector Reading
CA	Chemical Analysis
DT	In Situ Density Test

Groundwater Observation Wells



Boring Log HC-1

Soil Descriptions

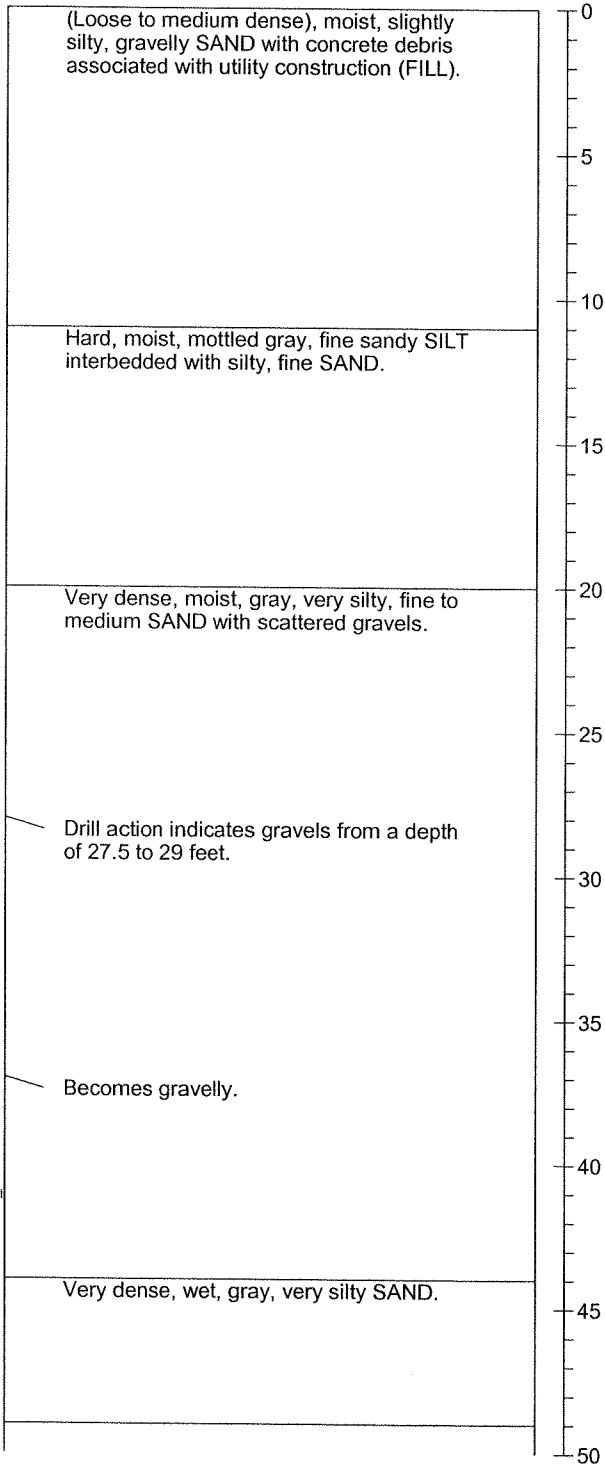
Approximate Ground Surface Elevation in Feet: 103 (NAVD 88)

Depth
in Feet

STANDARD PENETRATION RESISTANCE

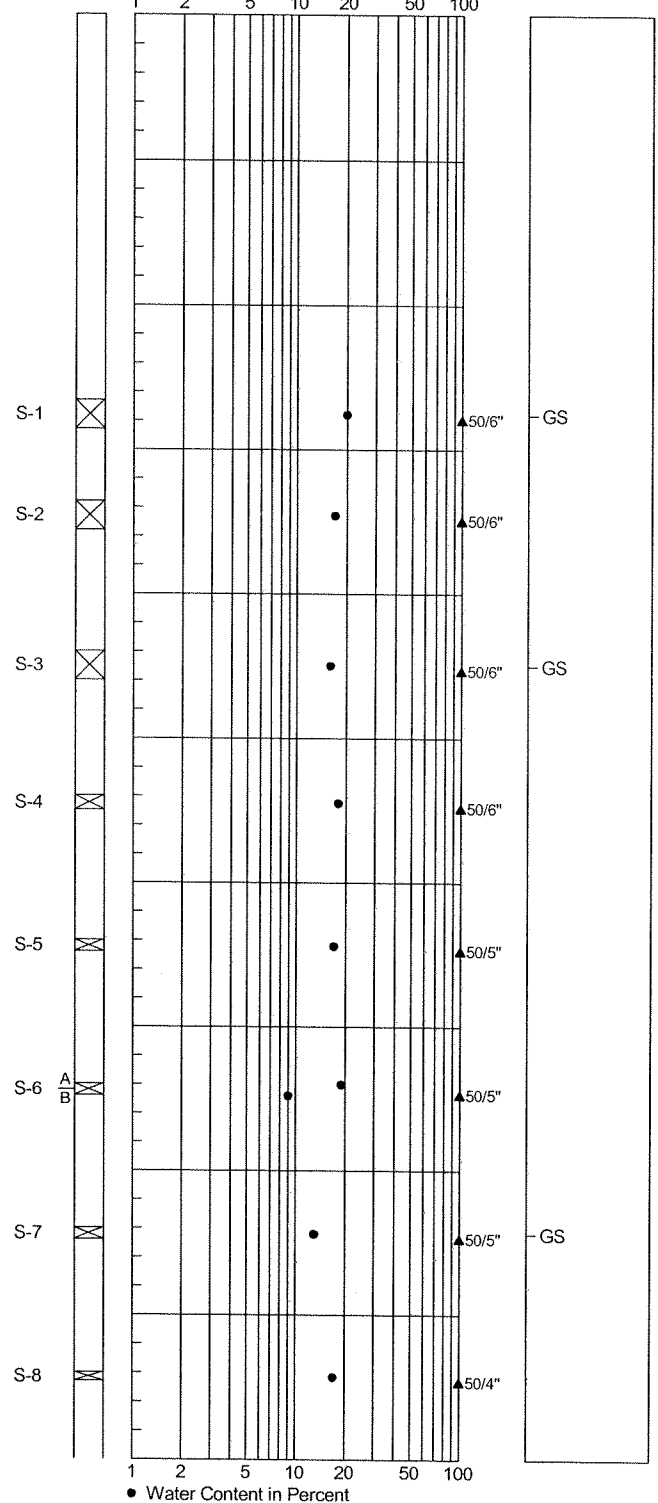
LAB TESTS

BORING LOG 773100BL.GPJ HC_CORP.GDT 8/11/03



Sample

▲ Blows per Foot



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Figure A-2

1/3

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log HC-1

Soil Descriptions

Approximate Ground Surface Elevation in Feet: 103 (NAVD 88)

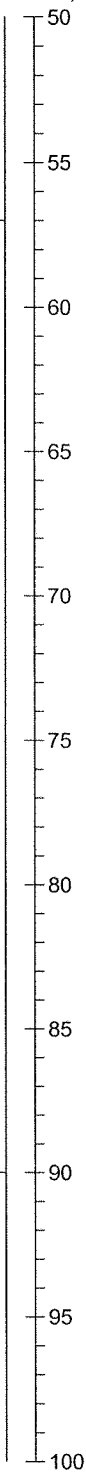
Very dense, moist, gray, slightly silty, very gravelly, fine SAND.

Hard, moist, gray CLAY with slickensides and occasional silt interbeds.

Grades slightly silty.

Very dense, moist, gray, slightly silty to silty, gravelly SAND.

Depth
in Feet



STANDARD PENETRATION RESISTANCE

LAB TESTS

Sample

▲ Blows per Foot

1 2 5 10 20 50 100

S-9

S-10

S-11

S-12

S-13

S-14

S-15

S-16

S-17

S-18

▲50/25"

▲50/6"

▲50/6"

▲87/11"

▲50/5"

▲50/3"

▲50/4"

▲50/5"

▲50/5.5"

▲50/3"

AL

AL

GS

• Water Content in Percent



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Figure A-2

2/3

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

BORING LOG 773100BL GPJ HC_CORP.GDT 8/11/03

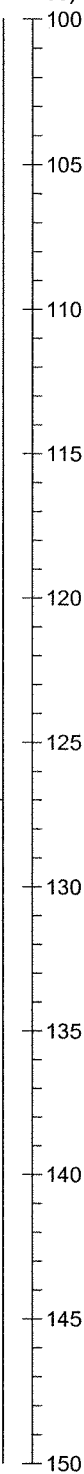
Boring Log HC-1

Soil Descriptions

Approximate Ground Surface Elevation in Feet: 103 (NAVD 88)

Very dense, moist, gray, slightly silty to silty, gravelly SAND.

Depth
in Feet



Bottom of Boring at 127.0 Feet.
Completed 05/12/03.

STANDARD PENETRATION RESISTANCE

LAB TESTS

Sample

▲ Blows per Foot

1 2 5 10 20 50 100

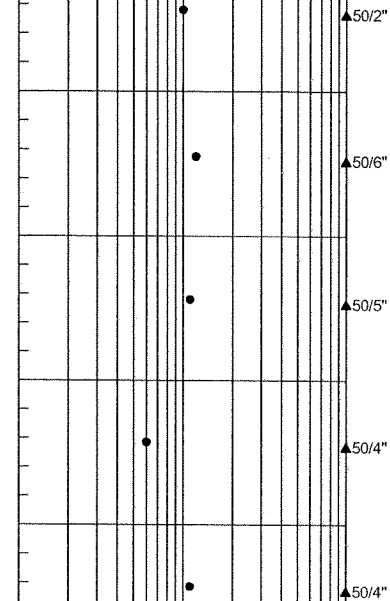
S-19

S-20

S-21

S-22

S-23



● Water Content in Percent

BORING LOG 773100BL.GPJ HC_CORP.GDT 8/11/03



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Figure A-2

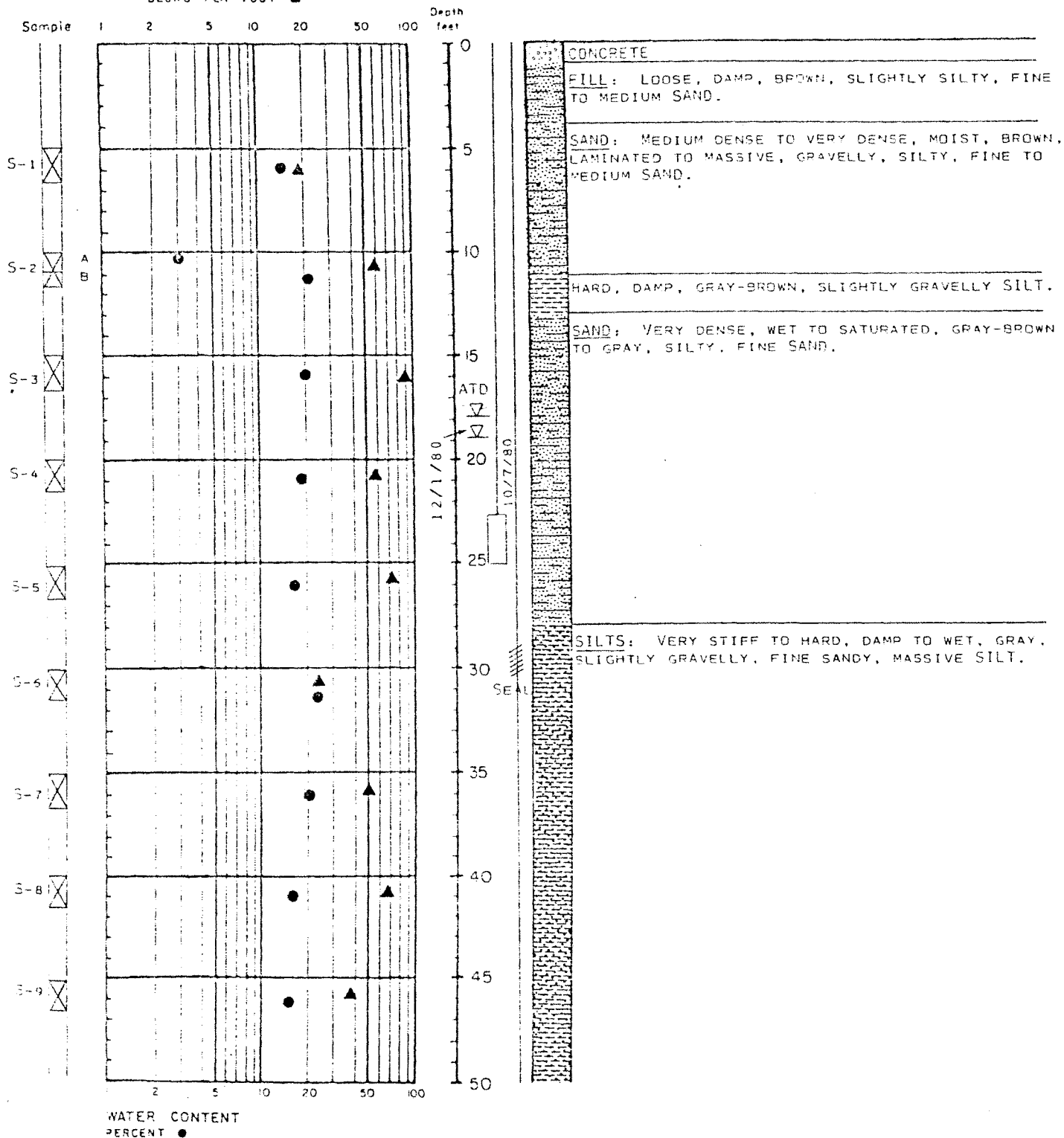
3/3

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

Boring Log B-1

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

- 2" O.D. Split Spoon Sample
- 3" O.D. Shelby Sample
- No Sample Recovery
- ATD At Time of Drilling
- Water Level
- Observation Well
- Liquid Limit
- Plastic Limit
- PP Pocket Penetrometer (1sf)
- TV Torvane (1sf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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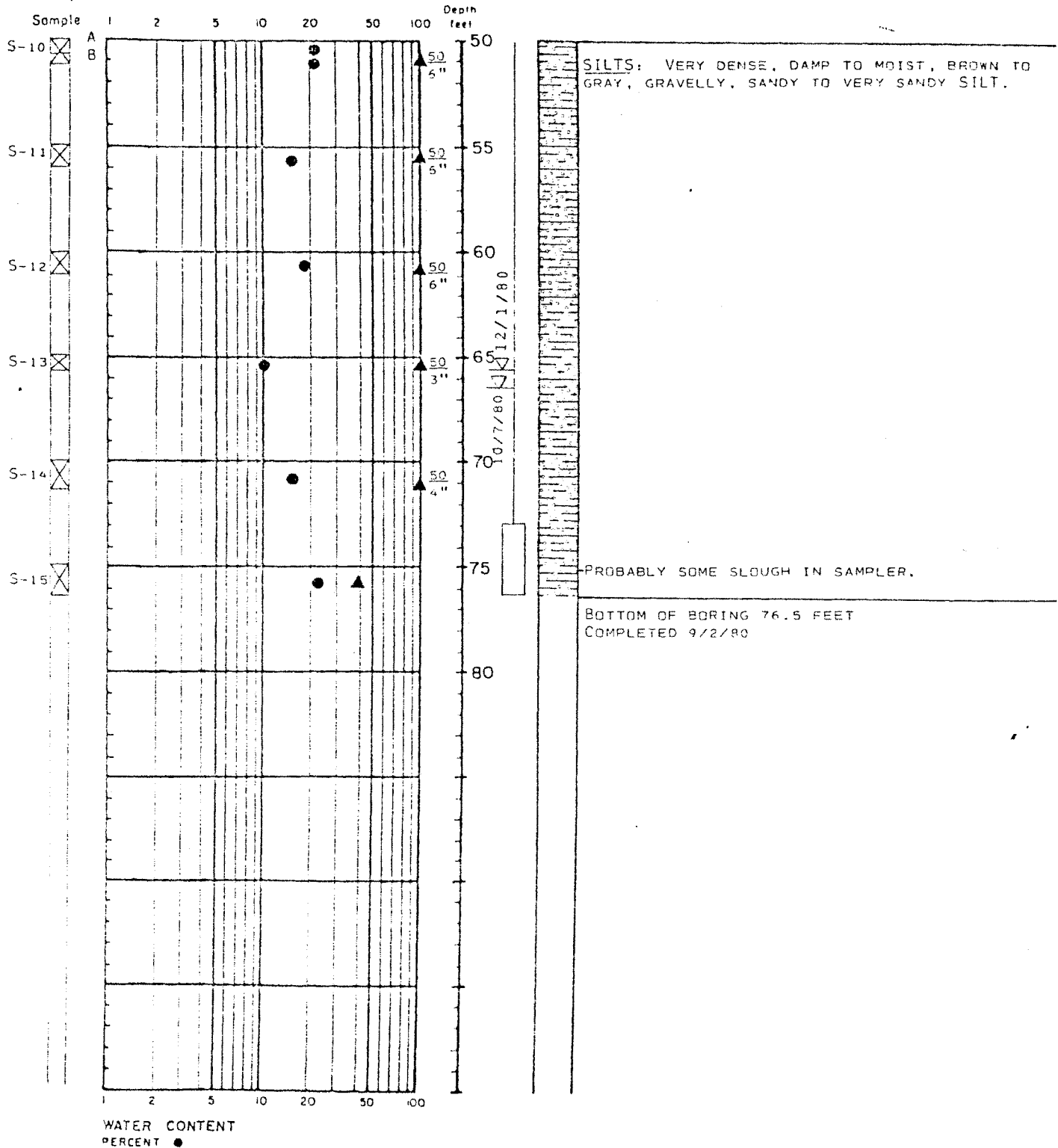
Figure A-3

8/03

1/2

Boring Log B-1

SOIL INTERPRETATION



HEL 8/6/03 773100005

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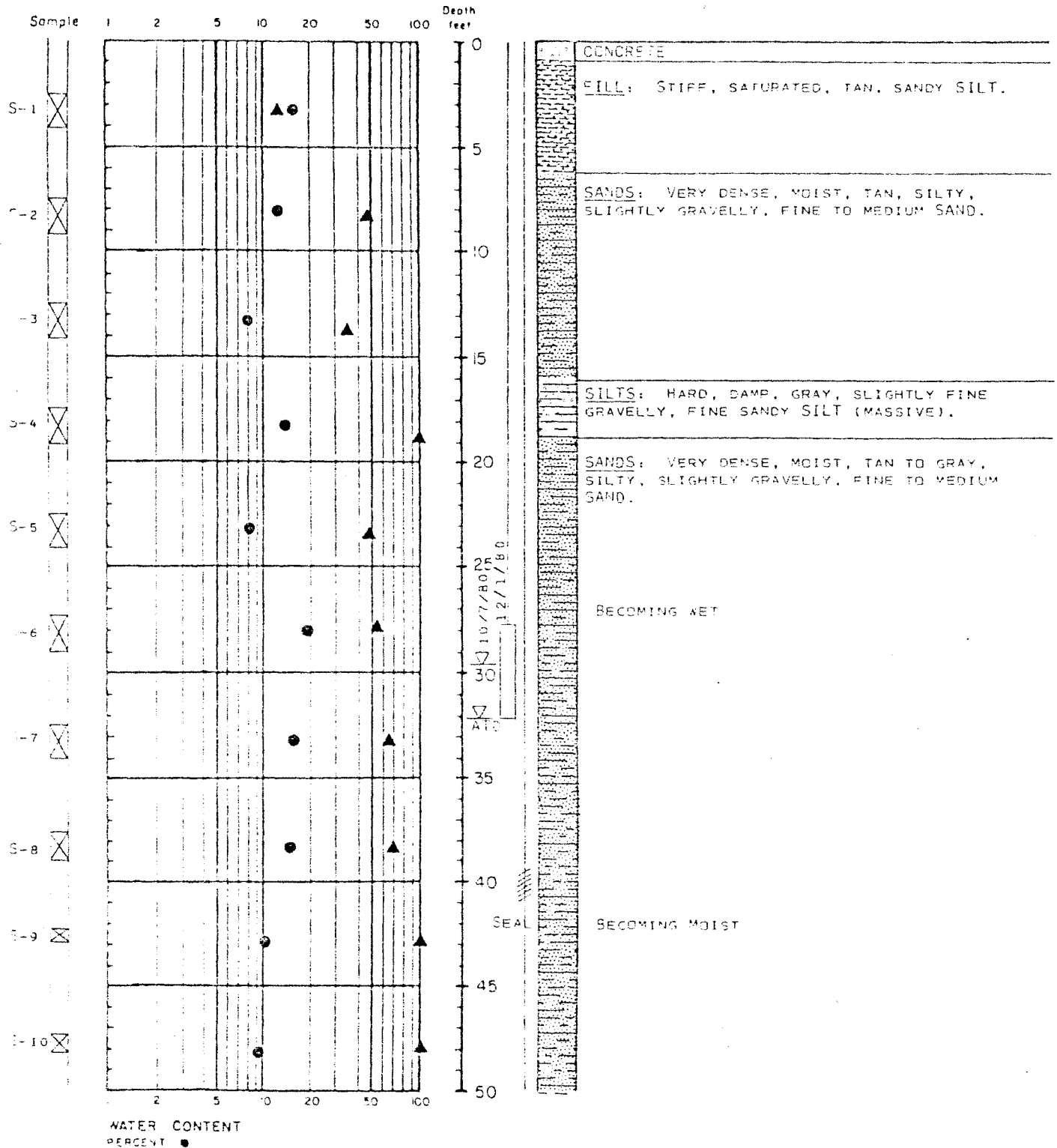
Figure A-3

2/2

Boring Log B-2

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

2" O.D. Split Spoon Sample

3" O.D. Shelby Sample

No Sample Recovery

ATD At Time of Drilling

Water Level

Observation Well

Liquid Limit

Plastic Limit

PP Pocket Penetrometer (tsf)

tv Torvane (tsf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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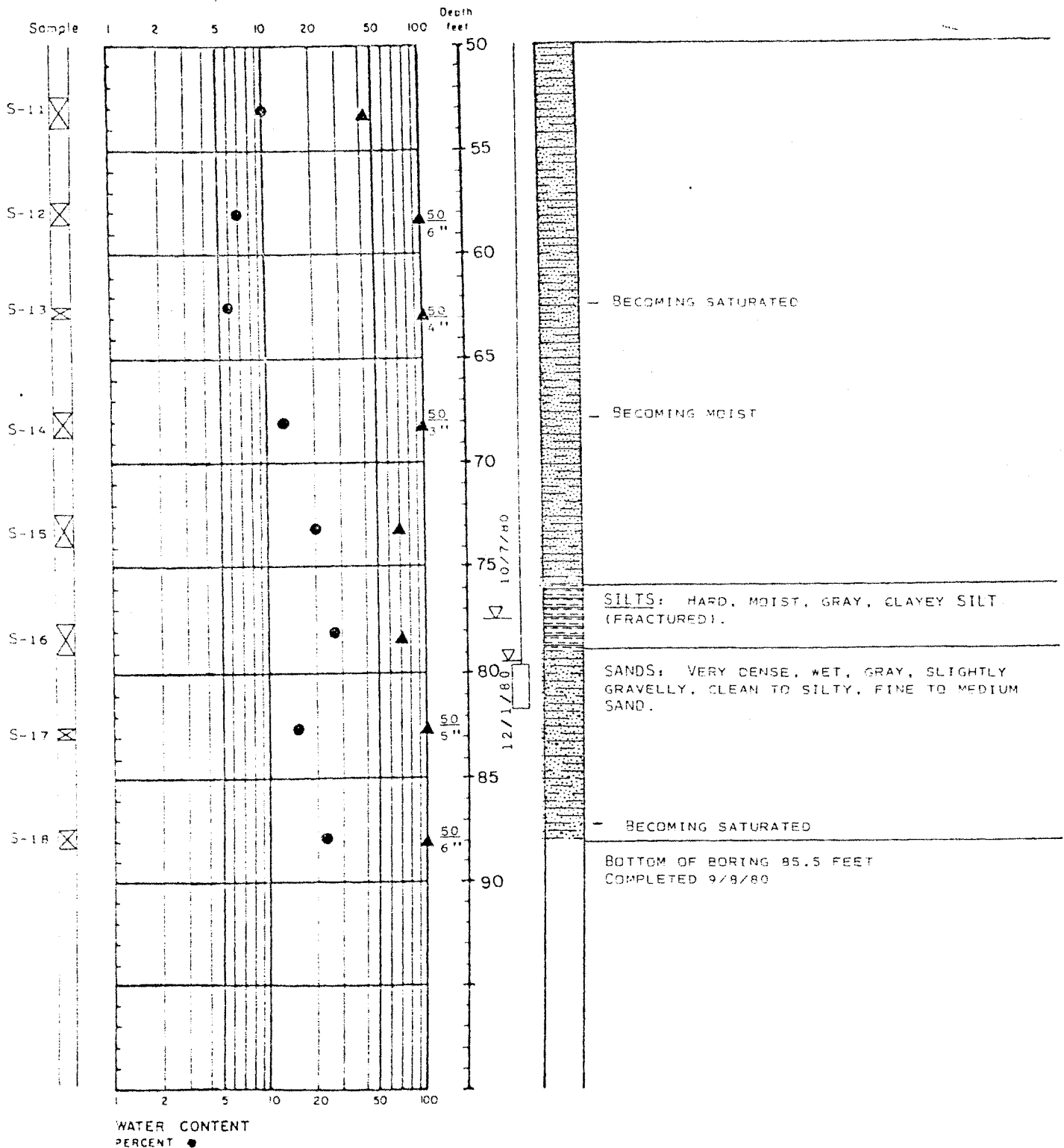
8/03

Figure A-4

1/2

Boring Log B-2

SOIL INTERPRETATION



LEGEND

- | | | |
|------------------------------|-------------------------|------------------------------|
| ⊗ 2" O.D. Split Spoon Sample | ATD At Time of Drilling | — Liquid Limit |
| ⊠ 3" O.D. Shelby Sample | ▽ Water Level | — Plastic Limit |
| • No Sample Recovery | □ Observation Well | PP Pocket Penetrometer (tsf) |
| | | TV Torvane (tsf) |

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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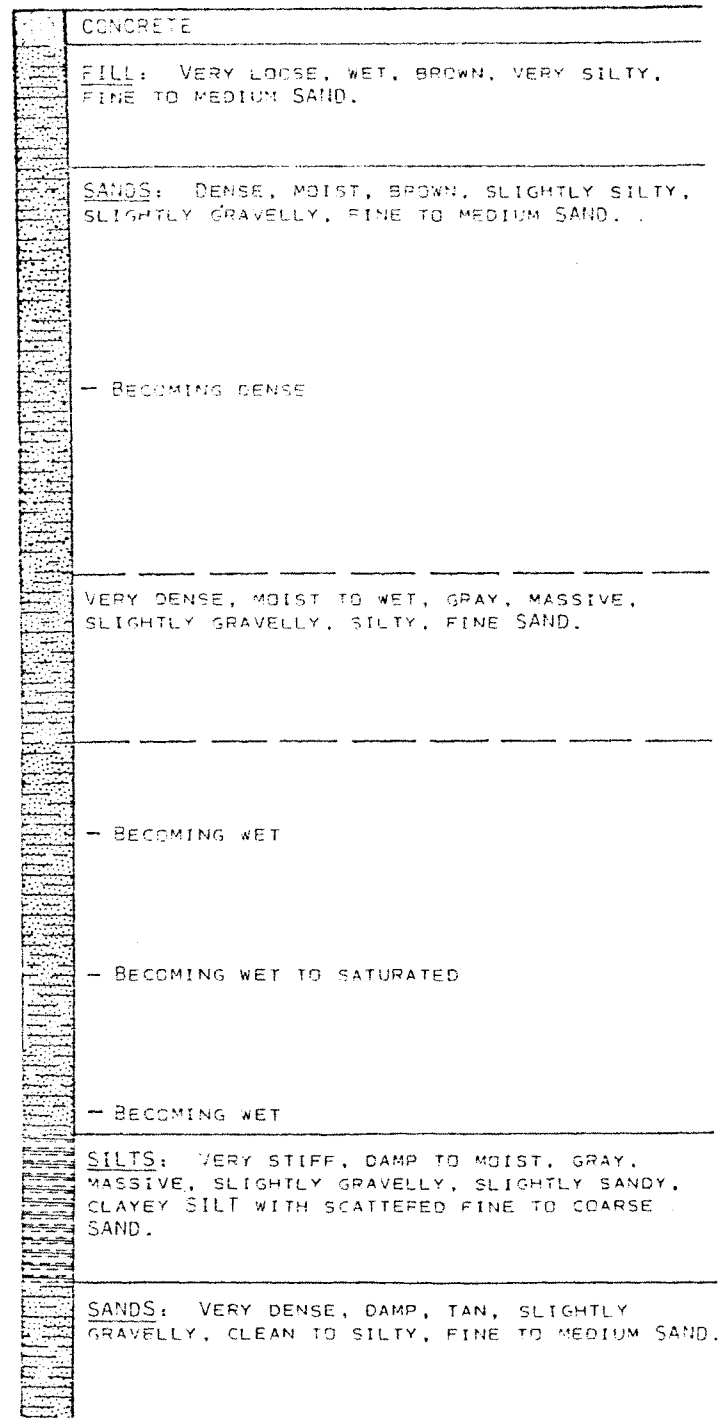
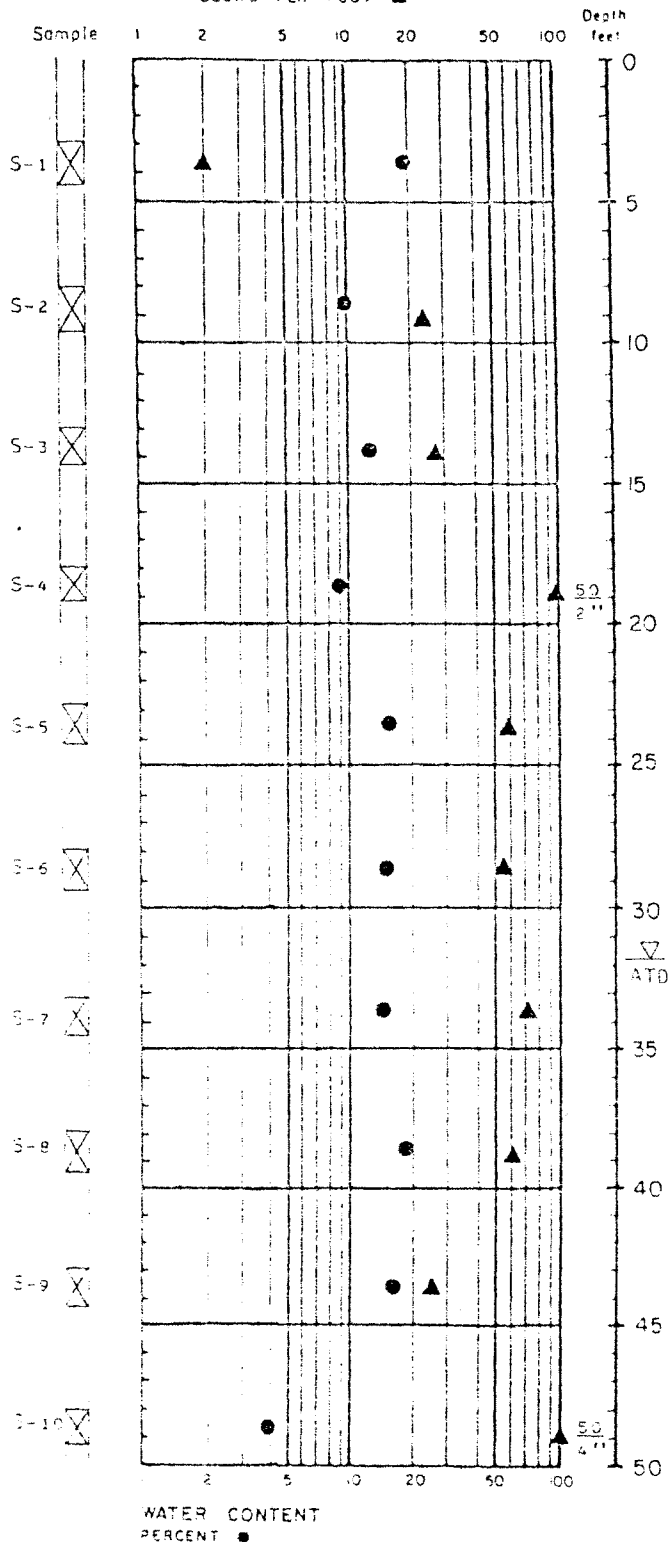
Figure A-4

2/2

Boring Log B-3

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

- 2" O.D. Split Spoon Sample
- 3" O.D. Shelby Sample
- No Sample Recovery
- ATD At Time of Drilling
- Water Level
- Observation Well
- Liquid Limit
- Plastic Limit
- PP Pocket Penetrometer (1sf)
- TV Torvane (1sf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.

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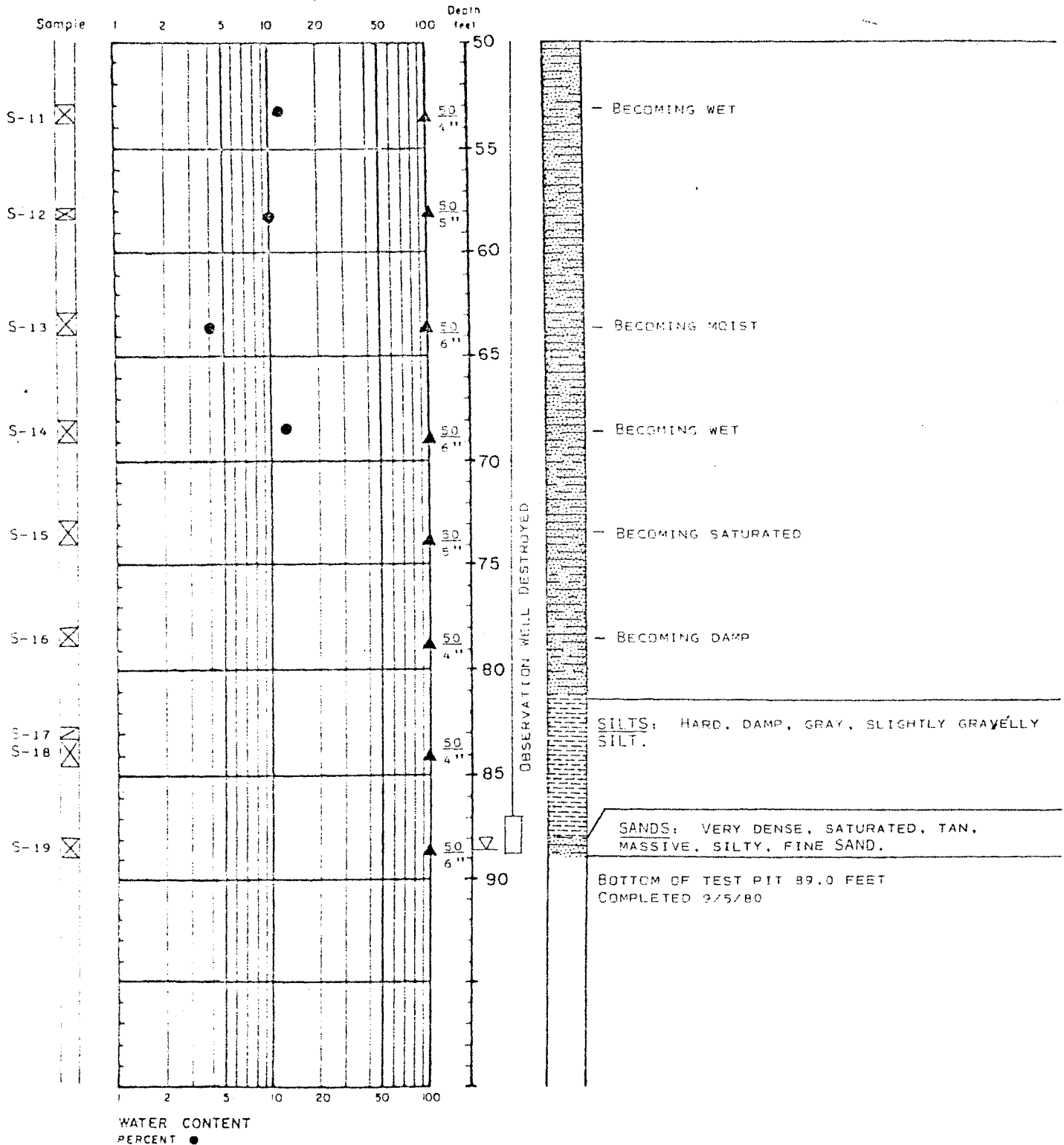
Figure A-5

8/03

1/2

Boring Log B-3

SOIL INTERPRETATION



LEGEND

- | | | |
|------------------------------|-------------------------|------------------------------|
| ⊗ 2" O.D. Split Spoon Sample | ATD At Time of Drilling | — Liquid Limit |
| ⊠ 3" O.D. Shelby Sample | ▽ Water Level | — Plastic Limit |
| • No Sample Recovery | □ Observation Well | PP Pocket Penetrometer (lbf) |
| | | tv Torvane (lbf) |

NOTE: Soil descriptions are interpretive and actual changes may be gradual.

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Figure A-5

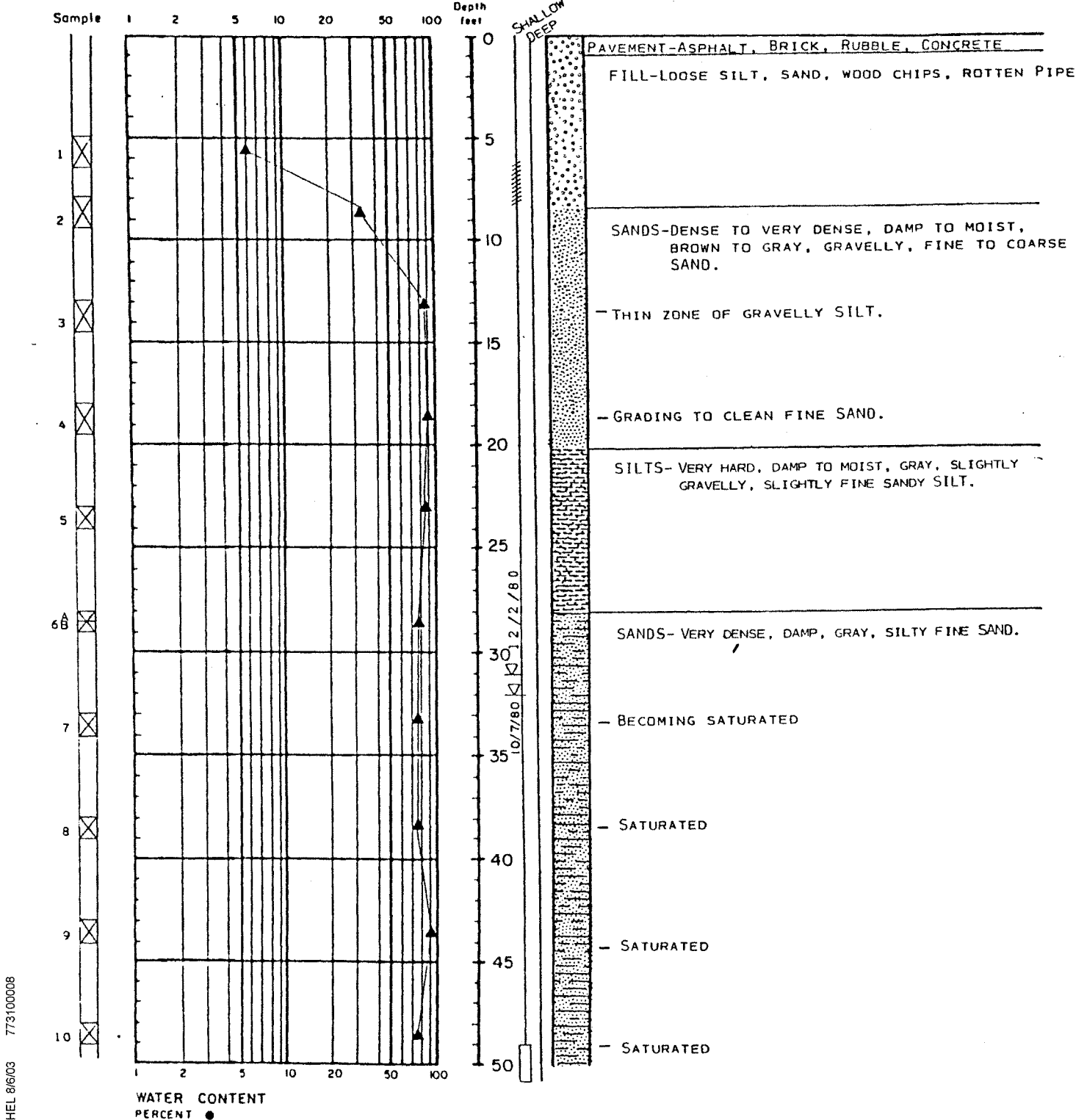
8/03

2/2

Boring Log B-4

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

- ☒ 2" O.D. Split Spoon Sample
- ☐ 3" O.D. Shelby Sample
- No Sample Recovery

- ATD At Time of Drilling
- ▽ Water Level
- Observation Well

- Liquid Limit
- Plastic Limit
- PP Pocket Penetrometer (1sf)
- tv Torvane (1sf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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Figure A-6

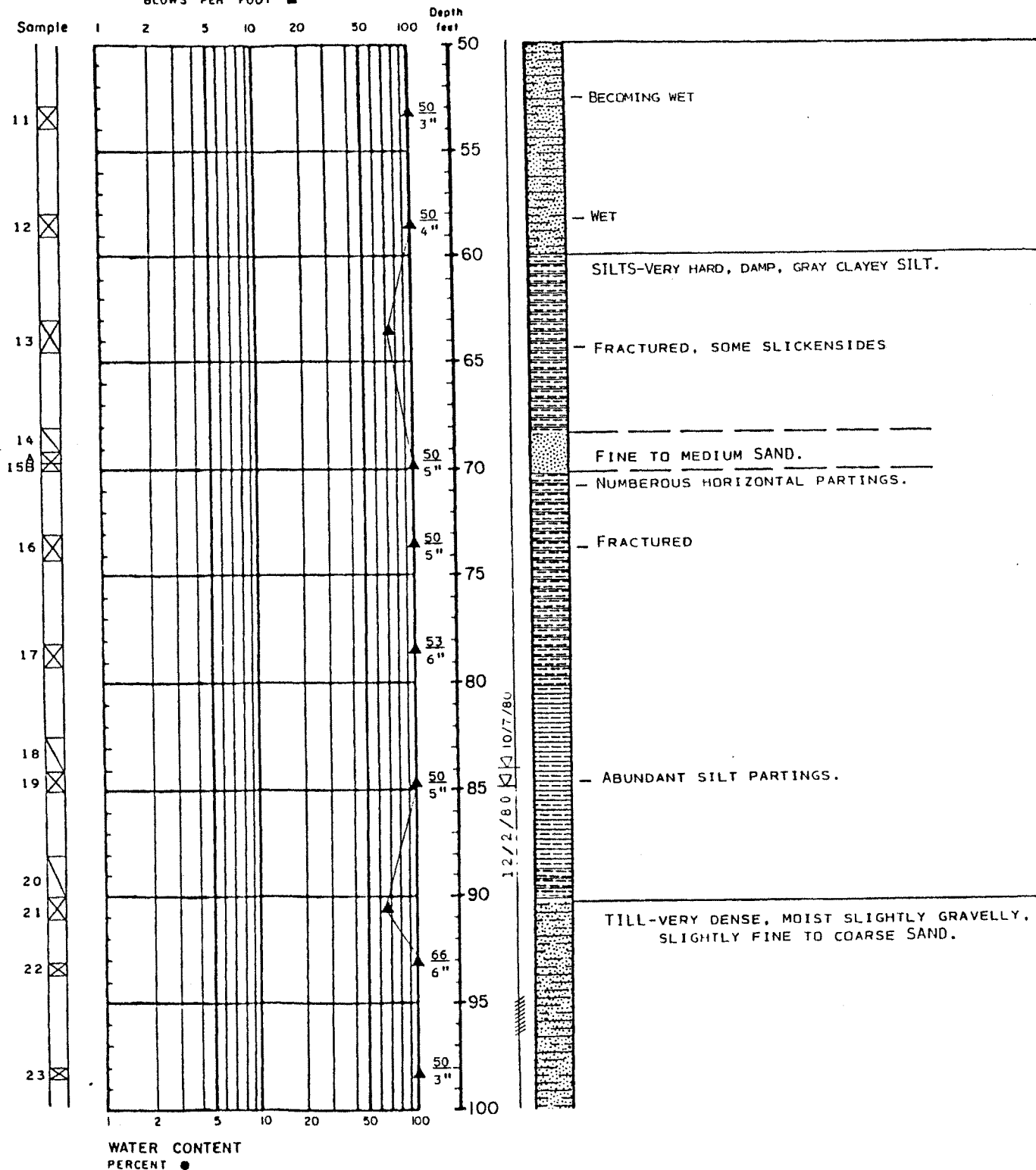
8/03

1/3

Boring Log B-4

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



HEL 8/6/03 773100008



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8/03

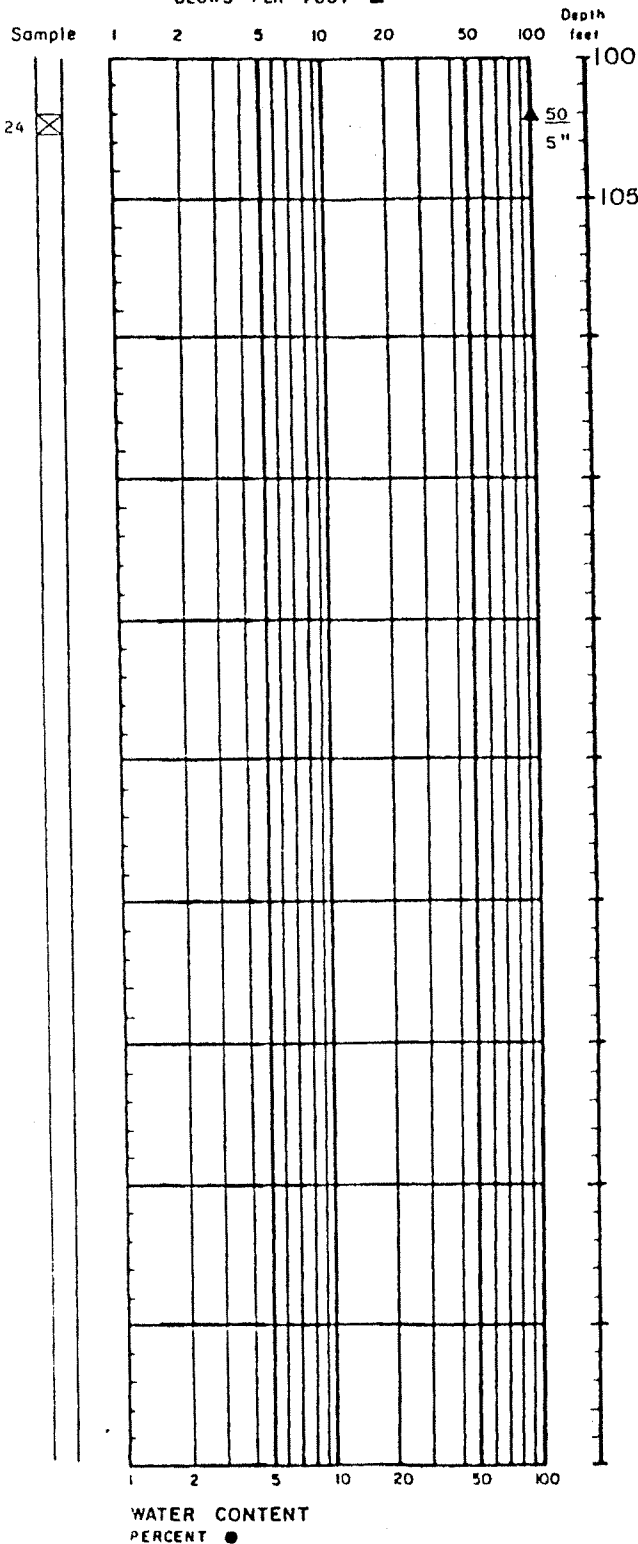
Figure A-6

2/3

Boring Log B-4

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



— SILT CONTENT INCREASING.

BOTTOM @ L02.5'
COMPLETED 9/3/80

HEL 8/6/03 773100008

LEGEND

- ☒ 2" O.D. Split Spoon Sample
- ☐ 3" O.D. Shelby Sample
- No Sample Recovery

- ATD At Time of Drilling
- ▽ Water Level
- Observation Well

- Liquid Limit
- Plastic Limit
- PP Pocket Penetrometer (1st)
- tv Torvane (1st)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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8/03

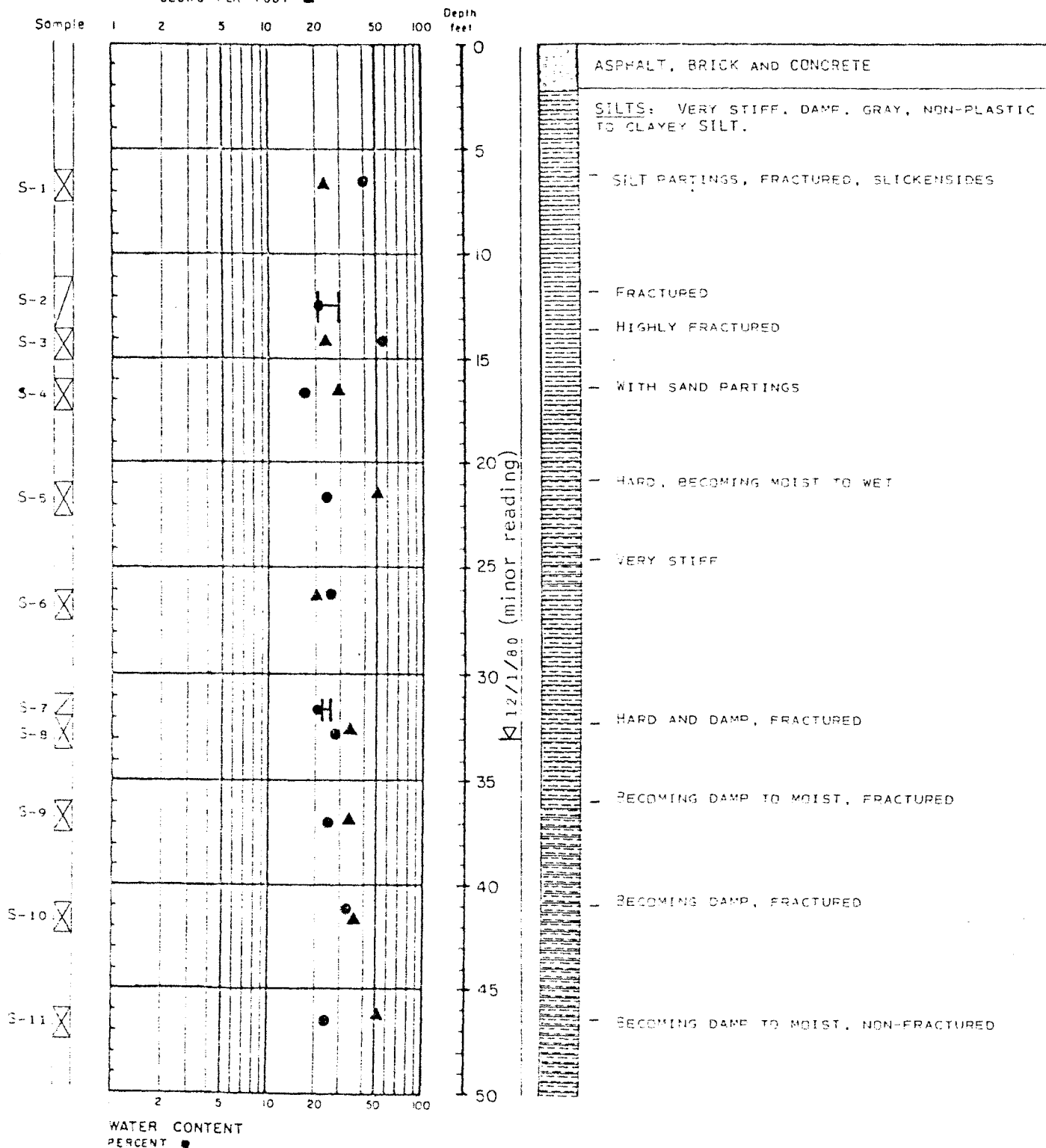
Figure A-6

3/3

Boring Log B-5

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

2" O.D. Split Spoon Sample

3" O.D. Shelby Sample

No Sample Recovery

ATD At Time of Drilling

Water Level

Observation Well

Liquid Limit

Plastic Limit

PP Pocket Penetrometer (1sf)

tv Torvane (1sf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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Figure A-7

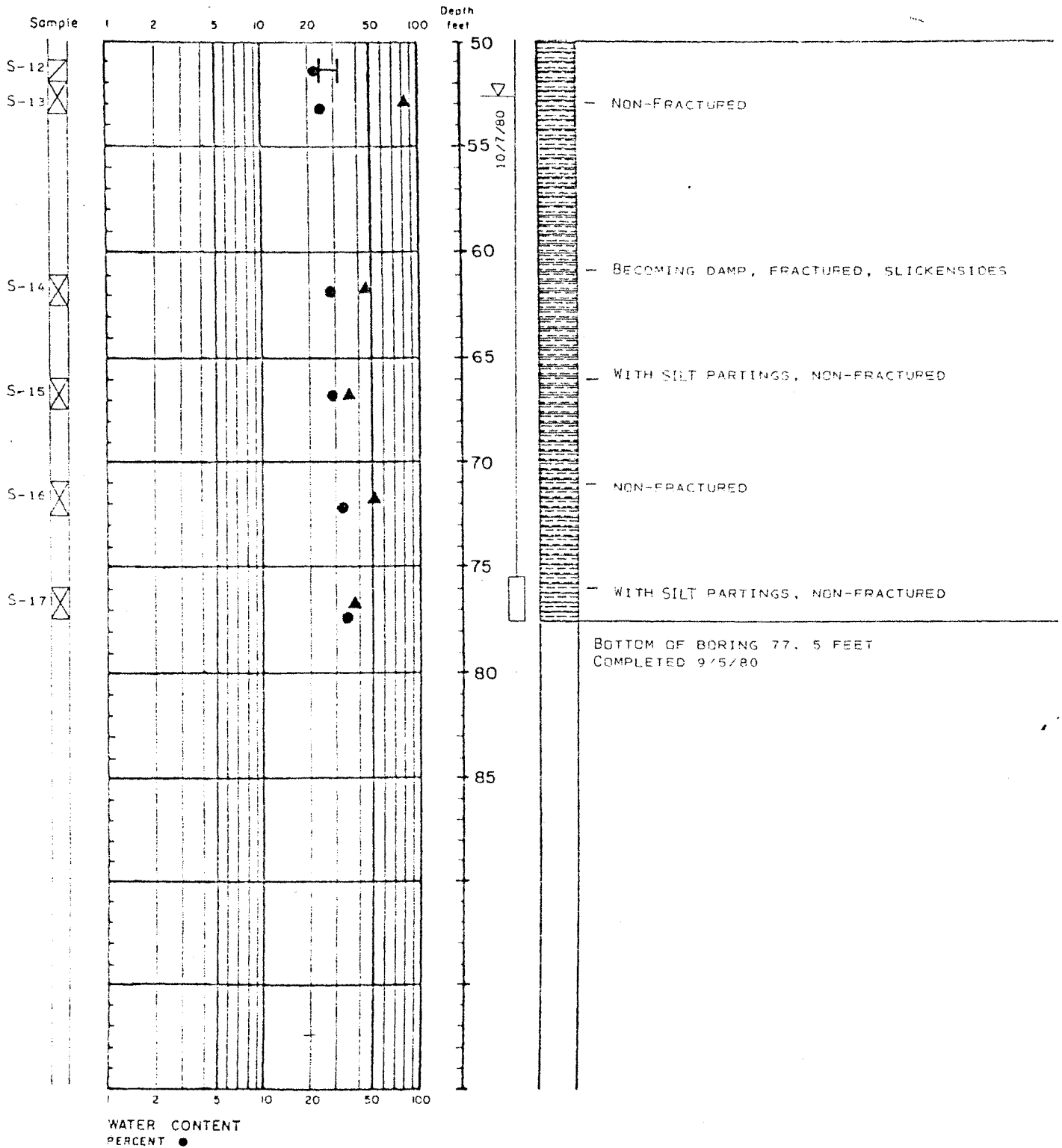
8/03

1/2

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HEL 8/6/03

Boring Log B-5

SOIL INTERPRETATION



LEGEND

- ☒ 2" O.D. Split Spoon Sample
- ☒ 3" O.D. Shelby Sample
- No Sample Recovery
- ATD At Time of Drilling
- ▽ Water Level
- Observation Well
- Liquid Limit
- Plastic Limit
- pp Pocket Penetrometer (1sf)
- tv Torvane (1sf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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8/03

Figure A-7

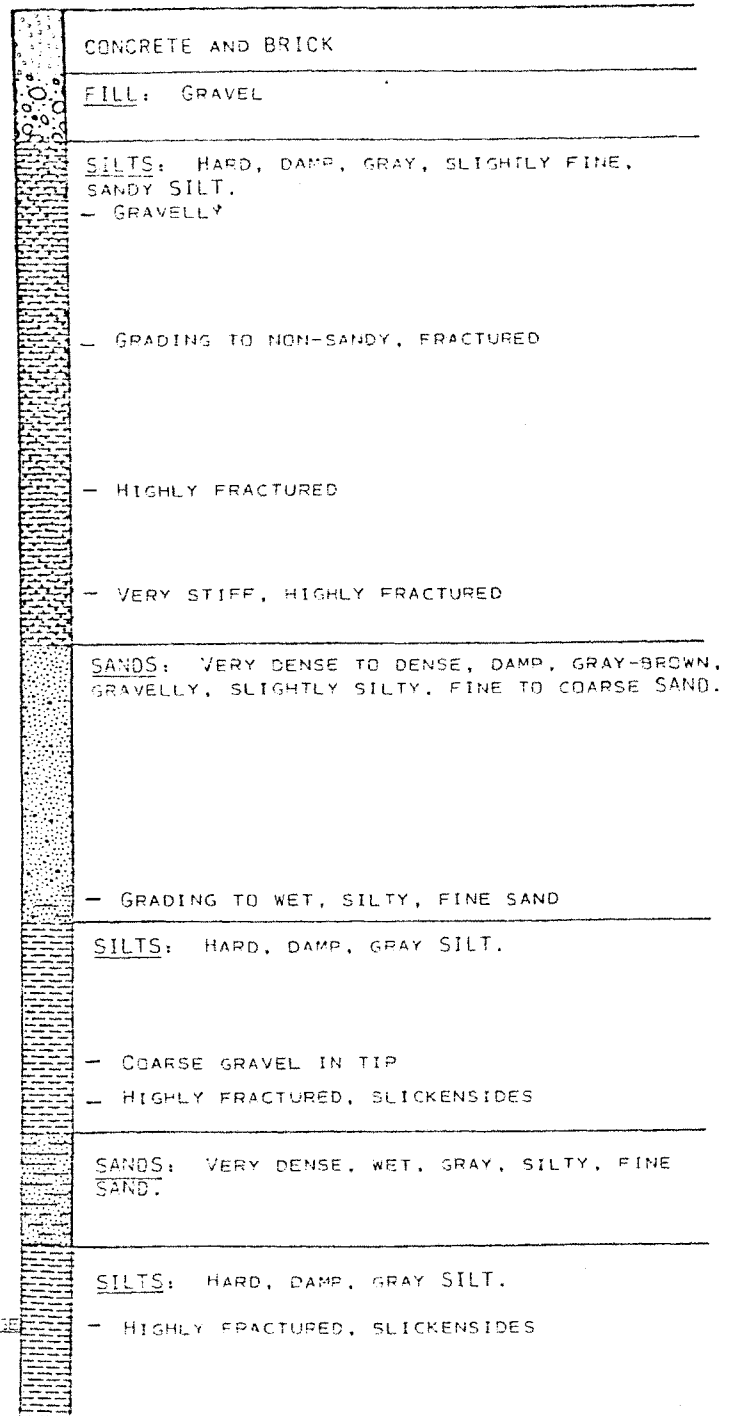
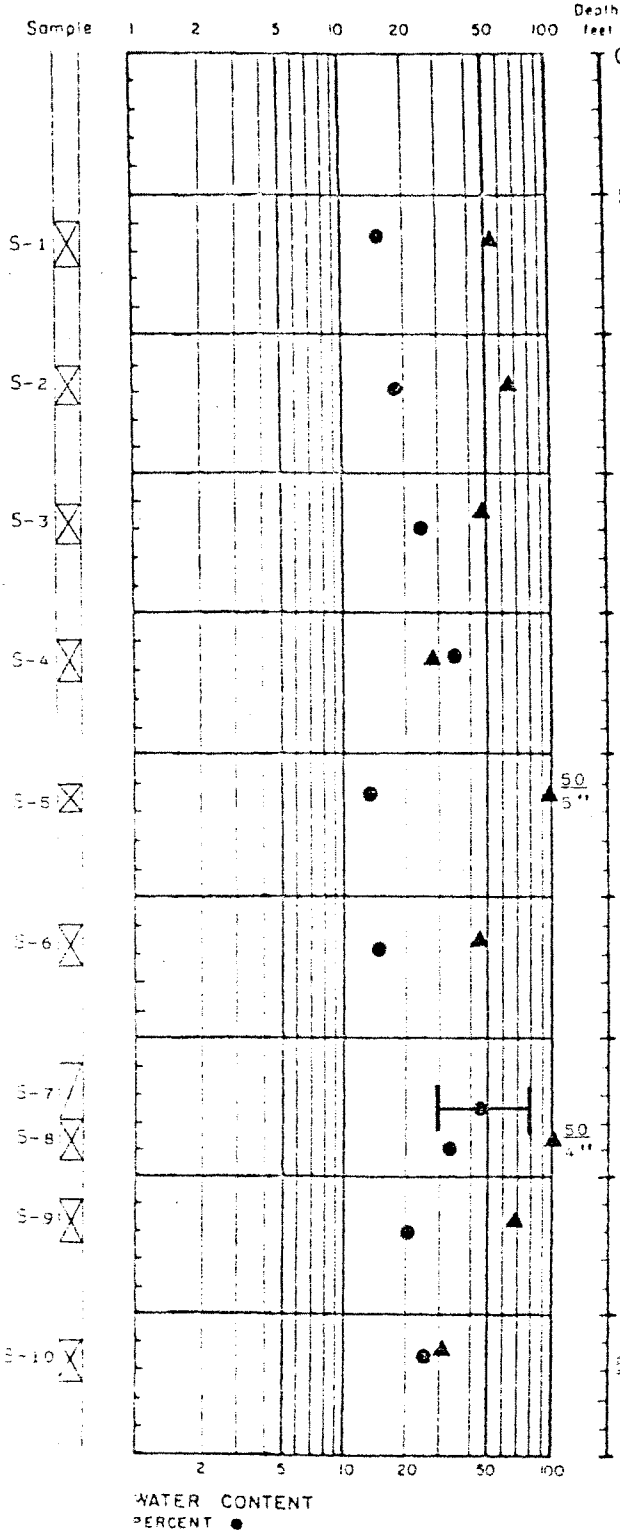
2/2

HEL 8/6/03 773100009

Boring Log B-6

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

- 2" O.D. Split Spoon Sample
- 3" O.D. Shelby Sample
- No Sample Recovery

- ATD At Time of Drilling
- Water Level
- Observation Well

- Liquid Limit
- Plastic Limit
- PP Pocket Penetrometer (1st)
- Tv Torvane (1st)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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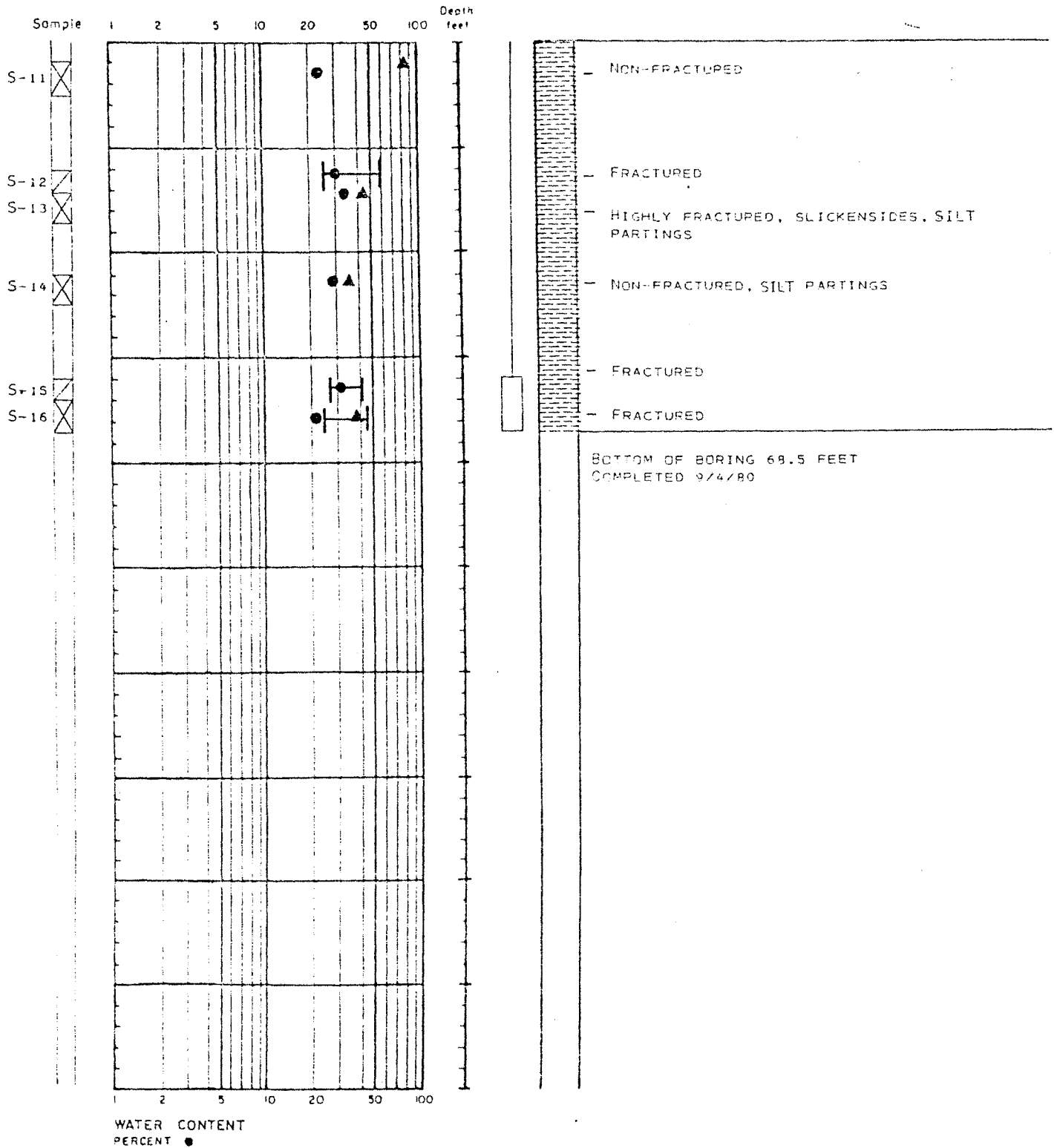
Figure A-8

8/03

1/2

Boring Log B-6

SOIL INTERPRETATION



LEGEND

- 2" O.D. Split Spoon Sample
- 3" O.D. Shelby Sample
- No Sample Recovery
- ATD At Time of Drilling
- Water Level
- Observation Well
- Liquid Limit
- Plastic Limit
- pp Pocket Penetrometer (tst)
- tv Torvane (tst)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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8/03

Figure A-8

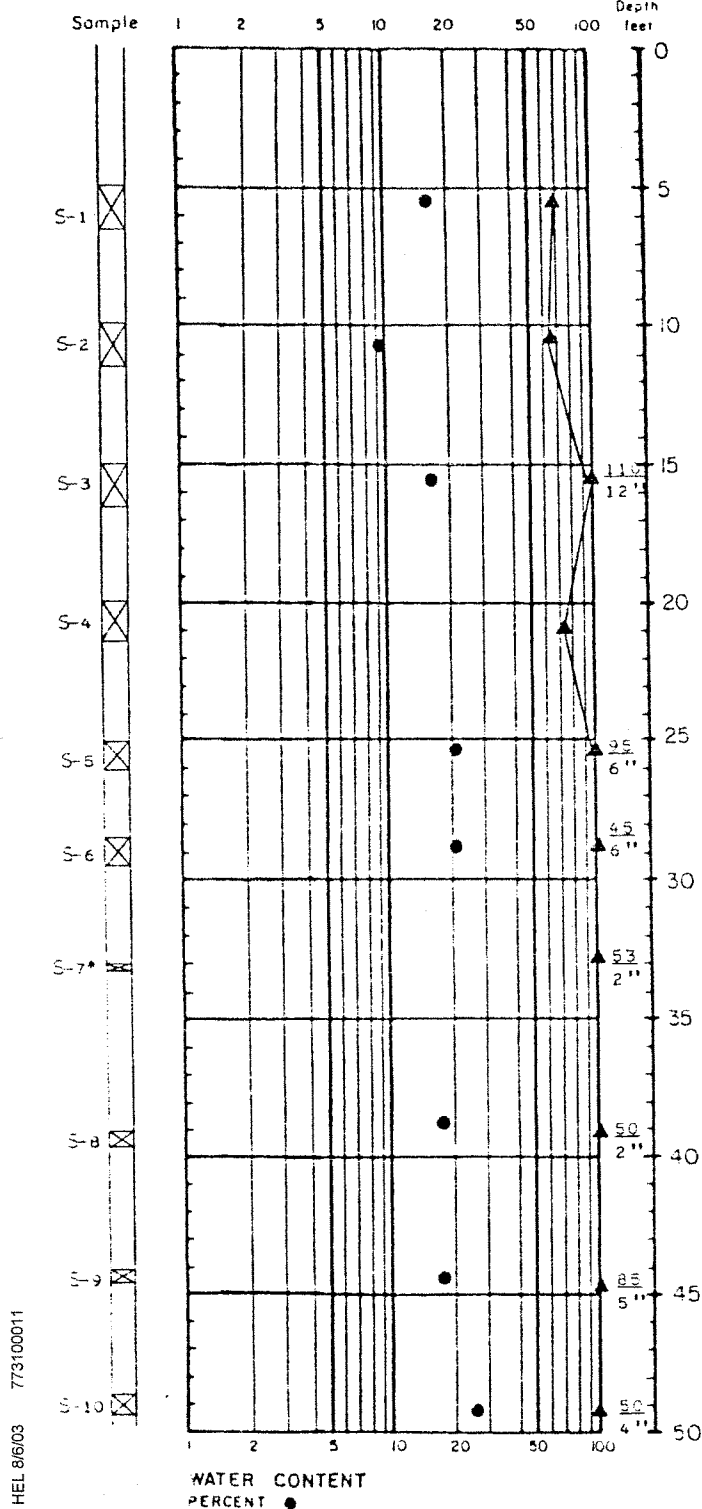
2/2

HEL 8/6/03 773100010

Boring Log B-7

STANDARD PENETRATION RESISTANCE
(140 pound weight, 30 inch drop)
BLOWS PER FOOT ▲

SOIL INTERPRETATION



GROUND SURFACE ELEVATION APPROXIMATELY 73 FEET.

ASPHALT

FILL: VERY DENSE, MOIST TO WET, BROWN, SILTY, SLIGHTLY GRAVELLY SAND WITH TRACE OF ORGANICS.

SANDS (FILL?): VERY DENSE, MOIST, BROWN, FINE TO MEDIUM SAND.

SANDS: VERY DENSE, MOIST, GRAY, SILTY FINE SAND.

OCCASIONAL GRAVEL.

NUMEROUS GRAVEL.

SILTS: VERY HARD, MOIST, GRAY, SLIGHTLY CLAYEY, FINE SANDY SILT WITH NUMEROUS THINLY INTERBEDDED FINE SAND LAMINATE.

SANDS: VERY DENSE, MOIST TO WET, GRAYISH-BROWN, SILTY, GRAVELLY SAND.

LEGEND

2" O.D. Split Spoon Sample

3" O.D. Shelby Sample

No Sample Recovery

ATD At Time of Drilling

Water Level

Observation Well

Liquid Limit

Plastic Limit

PP Pocket Penetrometer (tsf)

tv Torvane (tsf)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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Figure A-9

8/03

1/2

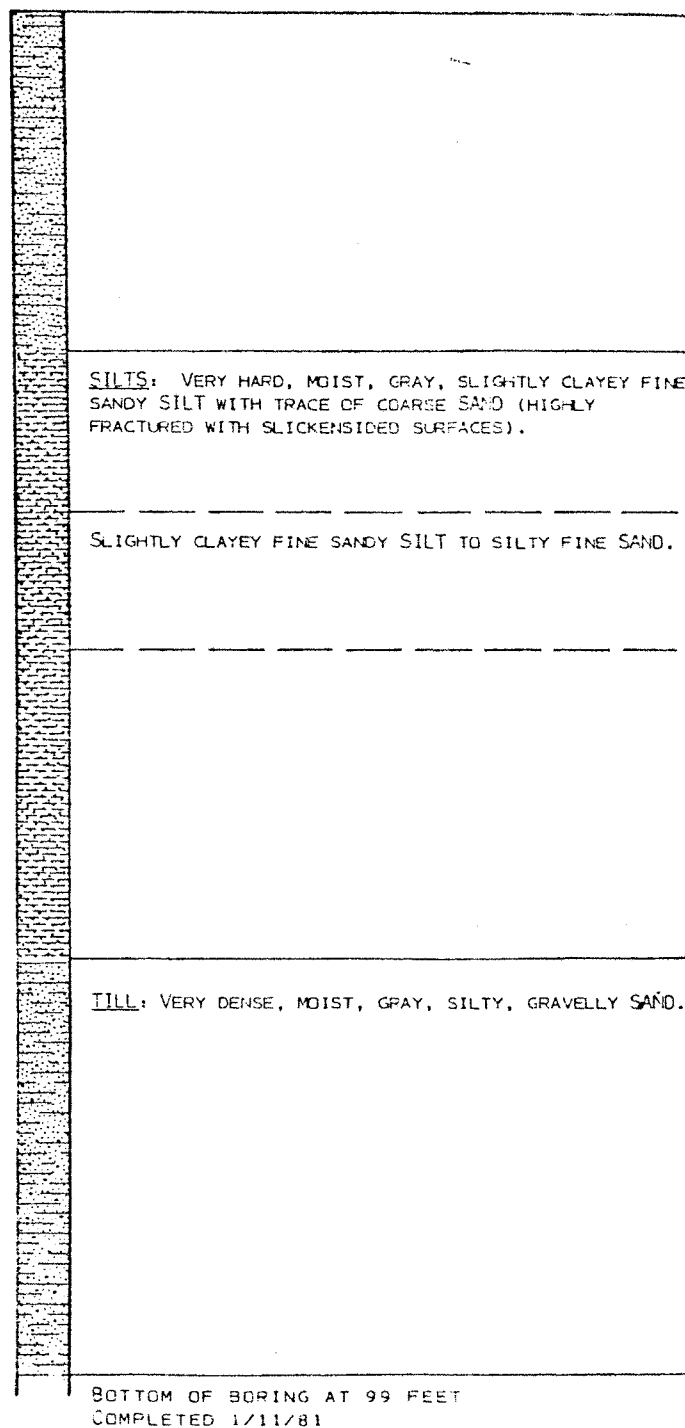
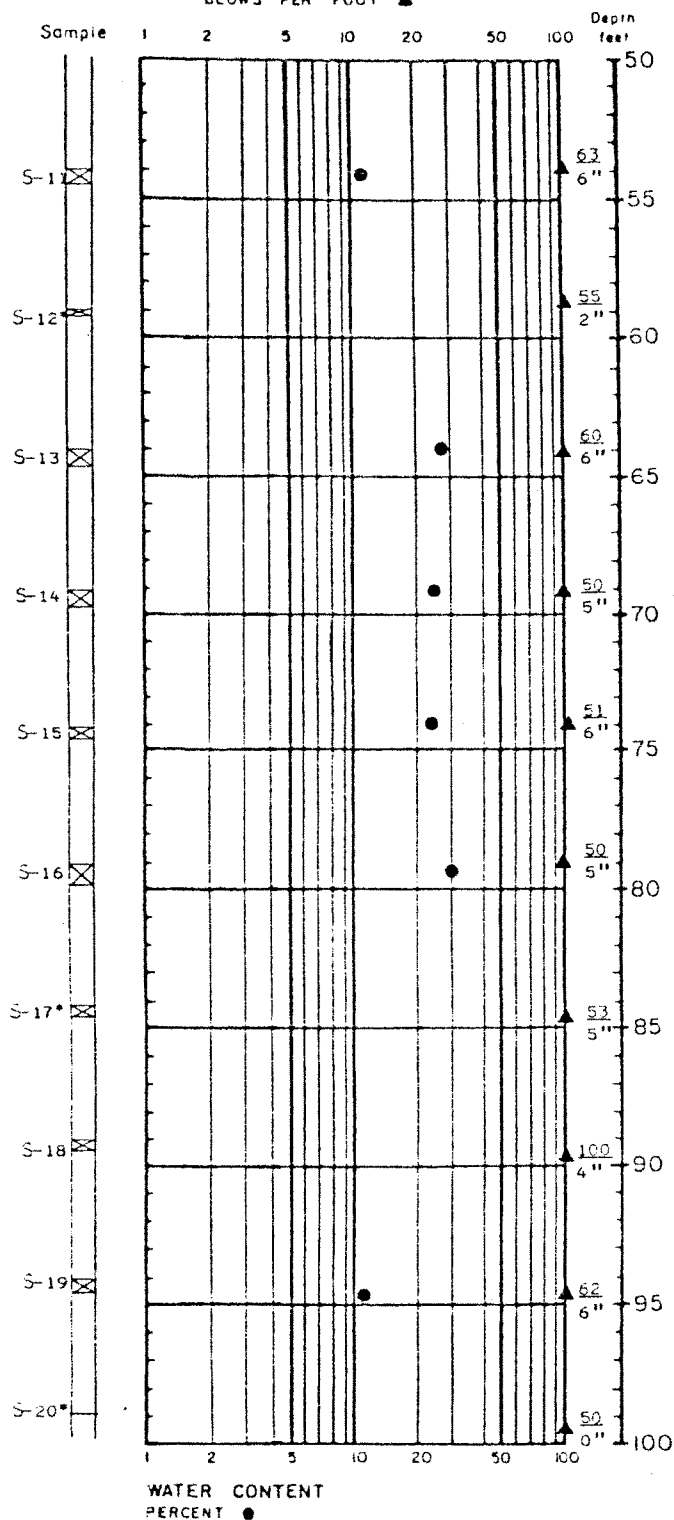
Boring Log B-7

STANDARD PENETRATION RESISTANCE

(140 pound weight, 30 inch drop)

BLOWS PER FOOT ▲

SOIL INTERPRETATION



LEGEND

☒ 2" O.D. Split Spoon Sample

☐ 3" O.D. Shelby Sample

* No Sample Recovery

ATD At Time of Drilling

▽ Water Level

□ Observation Well

— Liquid Limit

— Plastic Limit

PP Pocket Penetrometer (1st)

TV Torvane (1st)

NOTE: Soil descriptions are interpretive and actual changes may be gradual.



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Figure A-9

8/03

2/2

HEL 8/6/03 773100011